

Amendments to the Claims

1. (previously amended) A method for automatic firmware image recovery, comprising:

determining that a firmware image for server basic input output system (BIOS) code in a recipient system needs to be replaced;

sending a message over a network by a baseboard management controller on the recipient system, wherein the message requests a compatible replacement firmware image;

negotiating with a donor system based on a received acknowledgement that the donor system has a compatible image, using a predetermined policy to select the donor system from a set of at least one donor system having a compatible image;

uploading a compatible image sent by the donor system to the recipient system; and

updating the recipient system BIOS firmware with the uploaded compatible image from the baseboard management controller (BMC).

2. (previously amended) The method as recited in claim 1, wherein negotiating comprises:

receiving a message request by at least one donor system in the network;

determining whether the donor system has a compatible image;

when the donor system has a compatible image, sending an acknowledgement and offer to the recipient system; and

then performing the uploading the compatible image to the recipient system.

3. (original) The method as recited in claim 1, wherein the network is selected from a group consisting of a wired network and a wireless network.

4. (original) The method as recited in claim 1, wherein the message is sent via an out-of-band (OOB) connection.

5. (previously amended) The method as recited in claim 4, wherein the baseboard management controller residing on the recipient system is capable of communicating to donor systems via at least one communication means, wherein the communication means is selected from a group consisting of a local area network (LAN), a wireless access point, a wired inter-chassis management bus (ICMB), and a Bluetooth® protocol wireless network.

6. (original) The method as recited in claim 1, wherein the donor system comprises a management console.

7. (original) The method as recited in claim 1, wherein the donor system comprises a peer server in the network.

8. (previously amended) A machine accessible storage medium containing instructions that, when executed, cause a machine to:

determine that a firmware image for server BIOS code in a recipient system needs to be replaced;

send a message over a network by a baseboard management controller on the recipient system, wherein the message requests a compatible replacement firmware image;

negotiate with a donor system based on a received acknowledgement that the donor system has a compatible image, using a predetermined policy to select the donor system from a set of at least one donor system having a compatible image;

upload a compatible image sent by the donor system to the recipient system; and

update the recipient system BIOS firmware with the uploaded compatible image from the baseboard management controller (BMC).

9. (original) The machine accessible medium as recited in claim 8, wherein the network is selected from a group consisting of a wired network and a wireless network.

10. (original) The machine accessible medium as recited in claim 8, wherein the message is sent via an out-of-band (OOB) connection.

11. (previously amended) The machine accessible medium as recited in claim 10, wherein the baseboard management controller residing on the recipient system is capable of communicating to donor systems via at least one communication means, wherein the communication means is selected from a group consisting of a local area network (LAN), a wireless access point, a wired inter-chassis management bus (ICMB), and a Bluetooth® protocol wireless network.

12. (original) The machine accessible medium as recited in claim 8, wherein the donor system comprises a management console.

13. (original) The machine accessible medium as recited in claim 8, wherein the donor system comprises a peer server in the network.

14. (previously amended) A machine accessible storage medium containing instructions that, when executed, cause a machine to:

receive a message over a network, the message sent by a recipient system requesting an updated basic input output system (BIOS) firmware image;

determine by a donor system whether a compatible BIOS image is available;

when the donor system has a compatible BIOS image, negotiate with the recipient system using a predetermined policy to select the donor system from at least one donor system having a compatible BIOS image; and

when the donor system is selected from the at least one donor system having a compatible BIOS image, upload the compatible BIOS image to the recipient system, by a baseboard management controller on the recipient system.

15. (original) The machine accessible medium as recited in claim 14, wherein negotiating comprises instructions that cause the machine to:

send an acknowledgement offer to the recipient system; and

receive an acceptance acknowledgement for the offer.

16. (previously amended) A system for automatic firmware image update, comprising:

a recipient server having at least one processor and a firmware hub, wherein a basic input output system (BIOS) code is stored in the firmware hub;

a baseboard management controller (BMC) operatively coupled to the firmware hub, wherein the BMC comprises a BMC processor, a memory operatively coupled to the BMC processor, a communication interface enabling at least one of wireless network, chassis management bus and local area network communication; and

executable code loaded in memory accessible to the BMC processor that when executed enables the BMC to:

determine whether BIOS firmware requires update;

send a request for an updated image via a network communication interface to a donor server on the network;

negotiate with the donor server for a compatible image; and

load an updated compatible image in non-volatile memory in the firmware hub used for the system BIOS.

17. (original) The system as recited in claim 16, wherein the request is sent via an out-of-band (OOB) connection.

18. (original) The system as recited in claim 16, wherein the donor system comprises a management console.

19. (original) The system as recited in claim 16, wherein the donor system comprises a peer server in the network.

20. (previously amended) A method for providing a firmware image, comprising:
receiving a message over a network, the message sent by a baseboard management controller on the recipient system requesting an updated firmware BIOS image;
determining by a donor system whether a compatible image is available;
when the donor system has a compatible image, negotiating with the recipient system using a predetermined policy to select the donor system from at least one donor system having a compatible image; and
when the donor system is selected from the at least one donor system having a compatible image, uploading the compatible image to the recipient system, by the baseboard management controller.

21. (original) The method as recited in claim 20, wherein negotiating comprises:
sending an acknowledgement offer to the recipient system; and
receiving an acceptance acknowledgement for the offer.

22. (original) The method as recited in claim 20, wherein the network is selected from a group consisting of a wired network and a wireless network.

23. (original) The method as recited in claim 20, wherein the message is sent via an out-of-band (OOB) connection.

24. (original) The method as recited in claim 20, wherein the donor system comprises a management console.

25. (original) The method as recited in claim 20, wherein the donor system comprises a peer server in the network.

26. (previously amended) A method for automatic firmware image update ~~proxy~~, comprising:

determining that a basic input output system (BIOS) firmware image for a recipient system needs to be replaced;

retrieving a compatible updated BIOS image by a baseboard management controller (BMC) via an out-of-band connection, wherein the BIOS firmware image for the recipient system resides on a firmware hub operatively coupled with the BMC; and

updating the recipient system BIOS firmware with the retrieved compatible image.

27. (original) The method as recited in claim 26, wherein updating is performed while in a power state selected from the group of power states consisting of direct current (DC) power on and DC power off.

28. (original) The method as recited in claim 26, wherein retrieving a compatible updated BIOS image comprises identifying a predetermined location having a compatible image; and

retrieving the compatible image from the predetermined location.

29. (original) The method as recited in claim 28, wherein the predetermined location is selected from the group of locations consisting of a locally stored memory location, a locally stored non-volatile storage, a location accessible over a network, a storage location accessible by a predetermined processor, a web server, and an out of band input/output device accessible by the BMC while the recipient system is held in one of a reset state and inoperable state.

30. (original) The method as recited in claim 29, wherein the locally stored non-volatile storage is one of a Universal Serial Bus (USB) device, and a Personal Computer Memory Card International Association (PCMCIA) flash card.

31. (previously amended) The method as recited in claim 26, wherein retrieving a compatible updated BIOS image comprises:

negotiating with a donor system based on a received acknowledgement that the donor system has a compatible image, using a predetermined policy to select the donor system from a set of at least one donor system having a compatible image; and

then uploading the compatible image sent by the donor system to the recipient system.

32. (original) The method as recited in claim 31, wherein a baseboard management controller residing on the recipient system is capable of communicating to donor systems via at least one communication means, wherein the communication means is selected from a group consisting of a local area network (LAN), a wireless access point, a wired inter-chassis management bus (ICMB), and a Bluetooth® protocol wireless network.

33. (original) The method as recited in claim 31, wherein the donor system comprises a management console.

34. (original) The method as recited in claim 31, wherein the donor system comprises a peer server in the network.

35. (previously amended) A method for automatic firmware image update, comprising:

determining that a BIOS firmware image for a processor on a computer system needs to be replaced, wherein the computer system comprises at least one processor having associated firmware;

retrieving a compatible updated BIOS firmware image by a baseboard management controller (BMC) connected to the computer system, wherein the BMC retrieves the updated BIOS firmware image via an out-of-band connection, and wherein the BMC is operatively coupled to the processor requiring a firmware image update; and

updating the BIOS firmware image with the retrieved compatible BIOS image.

36. (original) The method as recited in claim 35, wherein retrieving a compatible updated firmware BIOS image comprises identifying a predetermined location having a compatible image; and

retrieving the compatible image from the predetermined location.

37. (original) The method as recited in claim 36, wherein the predetermined location is selected from the group of locations consisting of a locally stored memory location, a locally stored non-volatile storage, a location accessible over a network, a storage location accessible by a predetermined processor, a web server, and an out of band input/output device accessible by the BMC while the recipient system is held in one of a reset state and inoperable state.